



Traffic Operations

APPROVED PRODUCTS LIST

**TRAFFIC SIGNALS AND HIGHWAY
LIGHTING EQUIPMENT**

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

TRAFFIC SIGNALS AND HIGHWAY LIGHTING EQUIPMENT

I. GENERAL

This Approved Products List (APL) is based on equipment meeting department specifications and being tested for the specified test period with satisfactory performance. All models shall conform to the latest revision of the Missouri Standard Specifications for Highway Construction unless otherwise indicated. The models indicated on the list are approved, but are subject to final field inspection before acceptance.

The department frequently tests new products and equipment for traffic signals and highway lighting. These new products may be installed on a construction project, purchased on parts orders or with controller orders. Vendors may also submit items, at no cost to the department, for the test period. Only a limited number of units will be accepted for test statewide until an item is added to the Approved Products List. A vendor wishing to initiate a test on a new product shall submit a Product Evaluation Request Form - Signal and Lighting Equipment. Copies of this form can be obtained from our website at www.modot.state.mo.us or contact MoDOT Traffic Operations. Minor model changes do not require an evaluation period, although the vendor shall submit specification sheets and a sample of the product for the Department to inspect.

All equipment evaluations are coordinated through MoDOT Traffic Operations. The vendor supplying the equipment shall provide equipment specifications and a certification that the equipment meets department specifications before the test is performed. The equipment is tested for the period specified on the APL. Products that are not performing satisfactorily will be replaced with an approved product if the vendor cannot provide timely correction of the problem or if unsatisfactory operation of the intersection results.

If a vendor is proposing a product that does not meet department specifications, an explanation of why the product meets or exceeds the current specifications must be provided by the vendor in writing to Traffic Operations. If approved, the product may be tested for the specified period as described above. If the product is satisfactory, the Department will consider a revision to the applicable specifications. Products will not be added to the Approved Products List that do not meet department specifications.

Products on the APL shall continue to perform satisfactorily. In addition, the vendors shall support the products. Products not performing as required or not supported are subject to removal from the APL.

Grounds for removal of products include but are not limited to:

- Significant change in product specifications or design without notification to the department.

- Failure to correct or replace products that are defective in manufacturing or workmanship.

- Repeated patterns of malfunctions of a product not adequately corrected by the vendor.

- Unreasonable pricing of repair parts or repair work. Repair work not completed in a reasonable time frame.

- Excessive delivery times for new purchases or replacement parts.

Changes in standard specifications may also necessitate removal of specific products from the APL. If this occurs, there will be a grace period where the product will be retained on the list after the specifications are changed. However the product will be removed from the list if it is not revised to meet specifications.

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

II. TRAFFIC SIGNAL EQUIPMENT

All traffic signal equipment requires a one-year evaluation period.

CONTROLLERS

NEMA CONTROLLERS

MODEL

Eagle.....	EPAC Genesis M40
Econolite	ASC/2-2100
Peek.....	3000
Traffic Control Technologies (TCT)	LMD-8000

NEMA ON-STREET MASTER CONTROLLER

MODEL

Eagle.....	MARC 360
Econolite	KMC-10,000
Econolite	ASC/2M

SOLID STATE PRETIMED CONTROLLERS (ALL TYPES)

MODEL

Eagle.....	EPIC Series
Traffic Control Technologies (TCT)	LMD 40 Series

170 CONTROLLERS

MODEL

Eagle.....	170E
McCain.....	170E
Safetran	170E
Signal Control	170E

CABINETS AND BACK PANELS (NEMA & S.S. PRETIMED)

NOTE: Cabinets and Back panels that meet MoDOT specifications from the following manufacturers will be accepted. ALL other manufacturers must provide a model that meets specifications and complete a satisfactory one-year evaluation as described above to be added to the list.

NEMA CABINET AND BACK PANEL ASSEMBLIES

Control Technology
Eagle
Econolite
Henke/Bison
IDC/Gibbons

SOLID STATE PRETIMED CABINET AND BACK PANEL ASSEMBLIES

Eagle

MISSOURI DEPARTMENT OF TRANSPORTATION

APPROVED PRODUCTS LIST

CABINETS AND RACKS (TYPE 170 CONTROLLERS)

NOTE: Cabinets and Racks that meet MoDOT specifications from the following manufacturers will be accepted. ALL other manufacturers must provide a model that meets specifications and complete a satisfactory one-year evaluation as described above to be added to the list.

332 AND 336S CABINET AND RACK ASSEMBLIES

McCain
Safetran
Signal Control

CONFLICT MONITORS

NEMA CONFLICT MONITORS

MODEL

Eberle Design Incorporated (EDI).....	NSM-6
Eberle Design Incorporated (EDI).....	NSM-12
Eberle Design Incorporated (EDI).....	SSM-12LE
Naztec, Incorporated	NM512
Peek/Transyt.....	1200
Perfect Distribution & Control (PDC)	CM82-03
Perfect Distribution & Control (PDC)	CM82-06
Perfect Distribution & Control (PDC)	CM82-12
Solid State Devices.....	NM-6
Solid State Devices.....	NM-12
Solid State Devices.....	LCD-6P
Solid State Devices.....	LCD-12P
Traffic Control Technologies (TCT)	LNM Series

170 CONFLICT MONITORS

MODEL

Eberle Design Incorporated (EDI).....	210E
Solid State Devices.....	210P

CABINET ACCESSORIES

AUXILIARY TIME CLOCK

MODEL

Eltec	NTC-17E
Eltec	TC-14
RTC.....	AP41

EXTERNAL T.B.C. COORDINATORS

MODEL

Eltec	TC-14
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MISSOURI DEPARTMENT OF TRANSPORTATION

APPROVED PRODUCTS LIST

FLASHERS (170)

MODEL

Solid State Devices	204D
TSC	204-15

FLASHERS (NEMA)

MODEL

Eberle Design Incorporated (EDI)	810
Perfect Distribution & Control (PDC)	SSF-86
Perfect Distribution & Control (PDC)	SSF-88

FLASH TRANSFER RELAYS

MODEL

AMECO	136-4962
Magnacraft	W21ACPXD-5
Mid-Tex	136-62T-3A1
Perfect Distribution & Control (PDC)	FTR 91

LOAD SWITCHES (170)

MODEL

Perfect Distribution & Control (PDC)	200
Solid State Devices	200D
TSC	200 CUBE

LOAD SWITCHES (NEMA)

MODEL

Eberle Design Incorporated (EDI)	510
Perfect Distribution & Control (PDC)	SSS-86
Perfect Distribution & Control (PDC)	SSS-88
Traffic Control Technologies (TCT)	SSS-86

ISOLATORS (170 only) (242=DC, 252=AC)

MODEL

Detector Systems	242
Detector Systems	252
GDI	242
GDI	252
Perfect Distribution & Control (PDC)	242
Perfect Distribution & Control (PDC)	252
Safetran	242
Safetran	252

SURGE PROTECTORS

MODEL

Edco	SHA 1210
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MISSOURI DEPARTMENT OF TRANSPORTATION

APPROVED PRODUCTS LIST

TONE RECEIVERS

MODEL

InivenIR30M-05-30

TONE TRANSMITTERS

MODEL

InivenIT30

DETECTORS

MICROWAVE DETECTORS

MODEL

Microwave Sensors.....TC-26B

Electronic Integrated Systems, Inc. (EIS)RTMS X-2

MICROLOOP, PROBE

MODEL

3MCanoga 701

PEDESTRIAN PUSH BUTTONS

MODEL

PelcoSE-2000-00 (Round Pole Mount)

PelcoSE-2001-00 (Flat Mount)

POWER SUPPLY FOR CARD RACK DETECTORS - NEMA

MODEL

Detector Systems.....205

ICC.....PS24

PGKPS-1.2

SINGLE CHANNEL SHELF MOUNT DETECTORS, STANDARD

MODEL

Detector Systems.....910

Eberle Design Incorporated (EDI).....LM301

Sarasota.....535B/MS

SINGLE CHANNEL SHELF MOUNT DETECTORS, TIME DELAY

MODEL

Detector Systems.....913

Eberle Design Incorporated (EDI).....LM301T

Sarasota.....535T/MS

ULTRASONIC DETECTORS

MODEL

Microwave Sensors.....TC-30

2-CHANNEL CARD RACK COUNTING DETECTORS, DUAL OUTPUT

Eberle Design Incorporated (EDI).....LM632

MISSOURI DEPARTMENT OF TRANSPORTATION

APPROVED PRODUCTS LIST

2-CHANNEL CARD RACK COUNTING DETECTORS, SINGLE OUTPUT PULSE MODE (170)

MODEL

Detector Systems.....	222DR
Sarasota.....	222-GP5
Sarasota.....	222 GP6

2-CHANNEL CARD RACK COUNTING DETECTORS, SINGLE OUTPUT PULSE MODE (NEMA)

MODEL

Eberle Design Incorporated (EDI).....	1203D
ICC.....	S27B
Reno A & E	C
Reno A & E	G

2-CHANNEL CARD RACK DETECTORS, STANDARD (170)

MODEL

Detector Systems.....	222DR
Sarasota.....	222-GP5
Sarasota.....	222 GP6

2-CHANNEL CARD RACK DETECTORS, STANDARD (NEMA)

MODEL

Eberle Design Incorporated (EDI).....	LM602
ICC.....	S27B
Reno A & E	C
Reno A & E	G

2-CHANNEL CARD RACK DETECTORS, TIME DELAY (170)

MODEL

Sarasota.....	222T-GP5
Sarasota.....	222T GP6

2-CHANNEL CARD RACK DETECTORS, TIME DELAY (NEMA)

MODEL

3M.....	Canoga C800 Series
Detector Systems.....	262CR
Eberle Design Incorporated (EDI).....	LM602T

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

SIGNAL HEADS

BACKPLATES

MODEL

Neodesia Plastics	BP Series
Pelco	BK-100x Series
Traffic Parts	44xx Series

HARDWARE

NOTE: *Hardware that meets MoDOT specifications from the following manufacturers will be accepted. ALL other manufacturers must provide equipment that meets specifications and complete a satisfactory six-month evaluation as described above to be added to the list.*

Pelco	
Reliable 3/8" Strandvise	5202
Reliable 1/4" Strandvise	5200

LOUVERS

MODEL

Pelco	GPL
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POLYCARBONATE SIDE-MOUNT BRACKETS WITH RELATED HARDWARE

MODEL

Component Products	Any
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SIGNAL HEADS - ALUMINUM CONVENTIONAL

MODEL

Automatic/Eagle	SIG Series
McCain	MTSA Series
Safetrans/IDC	ST Series
Traffic Control Technologies (TCT)	HSS Series

SIGNAL HEADS - ALUMINUM PEDESTRIAN

MODEL

Automatic/Eagle	SIG Series
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SIGNAL HEADS - OPTICALLY LIMITED

MODEL

3M	HVS 131 Series
McCain	HPTS Series

SIGNAL HEADS - POLY CONVENTIONAL

MODEL

Chapel Hill	SIG-TPB-305-CTP-EVN-0
Eagle	SA Series
IDC/Safetrans	LT Series
McCain	MTSTP Series
Traffic Control Technologies (TCT)	PSS Series

MISSOURI DEPARTMENT OF TRANSPORTATION

APPROVED PRODUCTS LIST

SIGNAL HEADS - POLY PEDESTRIAN

MODEL

Chapel Hill	SIG-PPB-305-TTP-EVN-0
Eagle	SA Series
McCain	MTSP Series
Traffic Control Technologies (TCT).....	PSS Series

SIGNAL LENSES-GLASS

MODEL

Eagle	PBL Series
Kopp	Any
McCain	MSP Series

POSTS AND MAST ARMS

Note: Posts and Mast Arms do not require an evaluation period. Posts and Mast Arms shall be fabricated in accordance with MoDOT specifications and standards. Posts and Mast Arms shall be pre-approved as required by the MoDOT standards and specifications to be added to the list. The following manufacturers have pre-approved fabrication details and documentation on file with the department. Posts and Mast Arms are subject to field inspection before acceptance.

STEEL POSTS AND MAST ARMS

DRAWING NUMBER

Ameron International	MO9811 - Rev. 9 (Type C)
Ameron International	MO9812 - Rev. 10 (Type CL)
Union Metals.....	30443-B202 - Rev. 12 (Types C, CL, B & BL)
Valmont	DB00408 - Rev. C (Types C, CL, B & BL)

MISCELLANEOUS

LOOP SEALANTS

MODEL

(Loop sealants do not require material certification)

3M.....	5000
Bondo	575
Bondo	P606
Chemque	290S
Chemque	296-06
Durant Paints.....	Stat-A-Flex Polyseal
Pro-Seal.....	6006

PEDESTAL BASES

MODEL

Component Products.....	CPI-BAS-1
Pelco.....	PB5336
Pelco.....	PB5337
Pelco.....	PB5340
Pelco.....	PB5341
Traffic Parts	TP 289 X

MISSOURI DEPARTMENT OF TRANSPORTATION

APPROVED PRODUCTS LIST

SPLICE KITS (DETECTOR LEAD-IN)

MODEL

3M.....DBY Series

SIGNAL BULBS

LIGHT EMITTING DIODES (LED)

MODEL

Act One Communications, Inc.....T1-12G-001 (Green Ball)
 Act One Communications, Inc.....T1-12R-004 (Red Ball)
 Dialight.....430-1215-801 (Red Extended View)
 Dialight.....430-2275-801 (Green Extended View)
 Dialight.....431-3235-801 (Yellow Extended View)
 Dialight.....432-1210-001 (Red Ball)
 Dialight.....432-2270-001 (Green Ball)
 Dialight.....433-1210-003 (Red Ball)
 Dialight.....433-2270-001 (Green Ball)
 GELcore/Ecolux.....DR6-RTFB-23A (Red Ball)
 GELcore/Ecolux.....DR6-GCFB-23A (Green Ball)
 Ledtronics.....TRF-112-OBG-120A (Green Ball)
 Precision Solar Controls.....2035 (Green Ball)
 Precision Solar Controls.....1877 (Red Ball)

OPTICALLY LIMITED

MODEL

3M.....78-8008-7703-3
 General Electric (GE).....150PAR46/TS
 Philips.....150PAR46/TS

STANDARD - 1260 LUMEN (8 inch indications)

MODEL

Sylvania.....116A21TS8M

STANDARD - 1750 LUMEN (12 inch indications)

MODEL

Philips.....K135A21/TS/EW
 Sylvania.....135A21/TS/8M/SS
 H&H Industries.....HH229

VIDEO DETECTION SYSTEMS

VIDEO DETECTOR

MODEL

Econolite.....Autoscope 2004
 Econolite.....Autoscope Solo Pro
 Iteris.....Vantage One
 Iteris.....Vantage Plus
 Odetics.....Vantage Plus

**MISSOURI DEPARTMENT OF TRANSPORTATION
APPROVED PRODUCTS LIST**

Traficon.....VIP3

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

III. HIGHWAY LIGHTING

All highway lighting equipment require a one-year evaluation period except for items noted requiring a six-month evaluation.

LIGHTING POLES

Note: *Poles do not require an evaluation period. Poles shall be fabricated in accordance with MoDOT specifications and standards. They shall be pre-approved as required by the MoDOT standards and specifications in order to be added to the list. The following manufacturers have pre-approved fabrication details and documentation on file with the department. Lighting poles are subject to field inspection before acceptance.*

STEEL POLES

DRAWING NUMBER

Ameron International	MO98AT2 – Rev. 4 (Type AT45)
Ameron International	MO98AT3 – Rev. 4 (Type AT45)
Ameron International	MO98AT4 – Rev. 3 (Type AT30)
Ameron International	MO98B2 – Rev. 3 (Type B45 & MB45)
Ameron International	MO98B4 – Rev. 2 (Type B30)
Union Metals.....	71019-B6 - Rev. 7 (Type AT45)
Union Metals.....	71019-B7 - Rev. 4 (Types B45 & MB45)
Union Metals.....	71020-B2 - Rev. 5 (Type AT30)
Union Metals.....	71020-B3 - Rev. 4 (Type B30)
Valmont	DB00019 – Rev. H (Types AT30 & B30)
Valmont	DB00020 – Rev. J (Types AT45 & MB45)

FOUNDATIONS

Note: *Screw anchor foundations do not require an evaluation period. Screw anchor foundations shall be fabricated in accordance with MoDOT specifications and standards. They shall be pre-approved as required by the MoDOT standards and specifications in order to be added to the list. The following manufacturers have pre-approved fabrication details and documentation on file with the department. Screw anchor foundations are subject to field inspection before acceptance.*

SCREW ANCHOR FOUNDATIONS

DRAWING NUMBER

J. H. Botts	JHB MOH 30 – Rev. A (Type AT30)
J. H. Botts	JHB MOH 45-1 - Rev. A (Type AT45)
Hubbell Chance	SA112-0695 – Rev. A (Type AT45)
Hubbell Chance	SA112-0696 – Rev. A (Type AT30)

MISSOURI DEPARTMENT OF TRANSPORTATION

APPROVED PRODUCTS LIST

LUMINAIRES

NOTE: Luminaires will not be furnished with photoelectric cells. Receptacles will have a shorting plug in place of cell. Multi-tap ballast for 120 Volt and 240 Volt fixtures is permissible.

BRACKET ARM MOUNT - 150 WATT

MODEL

American Electric Lighting	114 Series
American Electric Lighting	Durastar 2000, Series 30
Crouse-Hinds/Cooper	OVZ Series
Crouse-Hinds/Cooper	OVX Series
General Electric (GE).....	M2RR Series
Holophane.....	Mongoose Series

BRACKET ARM MOUNT - 250 WATT

MODEL

American Electric Lighting	114 Series
American Electric Lighting	Durastar 2000, Series 30
Crouse-Hinds/Cooper	OVZ Series
Crouse-Hinds/Cooper	OVX Series
General Electric (GE).....	MSRL Series
Holophane.....	Mongoose Series

BRACKET ARM MOUNT - 400 WATT

MODEL

American.....	126 Series
American Electric Lighting	Durastar 2000, Series 30
Crouse-Hinds/Cooper	OVX Series
General Electric (GE).....	M4RR Series
Holophane.....	Mongoose Series

HIGH MAST LIGHTING

MODEL

NOTE: High mast lighting is custom designed for the location. Fixtures from the following manufacturer's series are considered pre-approved.

Cooper	HMC Series
General Electric (GE).....	HMA Series
Holophane.....	HMS Series

POLE TOP MOUNTING

MODEL

American Electric Lighting	Durastar 2000, Series 30
Holophane.....	HL2A Series
Holophane.....	Mongoose Series

SIGN LIGHTING - 250 WATT

MODEL

General Electric (GE).....	V2FN Series
Guth	B17632 Series
Holophane.....	PANL Series
Holophane.....	SNVW Series

MISSOURI DEPARTMENT OF TRANSPORTATION

APPROVED PRODUCTS LIST

SIGN LIGHTING - 400 WATT

MODEL

Holophane.....	PANL Series
Holophane.....	SNVW Series

UNDERPASS (WALLPACKS)

MODEL

American Electric Lighting	582 Series
Cooper	WPK Series
General Electric (GE).....	WAL Series
Holophane.....	MDWP Series
Holophane.....	WL2K Series
Hubbell	PGM-150S Series

CONTROL EQUIPMENT

CONTACTORS-ELECTROMECHANICAL

MODEL

Square D.....	Type S
Westinghouse/Cutler-Hammer	A202 Series

CONTACTORS-MERCURY

MODEL

Dayton	6A/6X Series
Magnecraft.....	WM Series

CONTROL CABINETS

NOTE: Cabinets that meet MoDOT specifications from the following manufacturers will be accepted. All other manufacturers must provide a model that meets specifications and complete a satisfactory six-month evaluation as described above to be added to the list.

Cleveland Switchboard
Coxline
Hoffman
Shallbetter
Inland Technologies

LIGHTNING ARRESTER

MODEL

Delta	LA 600 Series
General Electric Tranquell	9L15ECB001
Square D.....	SDSA 1175

MOUNTING SOCKET FOR PHOTOELECTRIC CONTROL

MODEL

NOTE: Mounting sockets require a six-month evaluation.

American.....	PBC
Fischer-Pierce.....	S476-71
General Electric (GE).....	MB-PECTL

MISSOURI DEPARTMENT OF TRANSPORTATION

APPROVED PRODUCTS LIST

PAD MOUNTED LIGHTING CONTROL STATION

MODEL

Myers	MEUGLA -M100-MDOT
Pacific Utility Products	USP -M100-100-MO
Tesco	28-101-5 Type III BF
Tesco	28-102F

PHOTOELECTRIC CONTROL

MODEL

Area Lighting Research	SST Series
American	8060-4F
Dark To Light	D120-1.0-ST
Fischer-Pierce	7700 Series
General Electric (GE)	PEC1TL (120 v)
General Electric (GE)	PEC3TL (240 v)
ITT	SAT-15
Precision	P26275

TYPE A CIRCUIT BREAKERS

MODEL

Square D	FAL Series
Westinghouse/Cutler-Hammer	EHD Series (1-Pole)
Westinghouse/Cutler-Hammer	FDB Series (2-Pole)

MISCELLANEOUS

AVIATION LIGHTING

MODEL

Hughey & Philips	KG114
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FUSED SLIP CONNECTORS

MODEL

NOTE: Slip connectors require a six-month evaluation.

Buss	HEB-JWRYC
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NAVIGATION LIGHTING

MODEL

Tideland	ML-140 with TF-3AC Lamp Changer
Automatic Power, Inc.	FA-143

SPLICE KITS

MODEL

3M	82A1 (Single)
3M	82A2 (Single)
3M	82B1 (Three Way)
3M	82B2 (Three Way)

TRANSFORMER BASES

MODEL

Akron Foundry	TB1-17H (for AT30)
Akron Foundry	TB3-17H (for AT45)

MISSOURI DEPARTMENT OF TRANSPORTATION APPROVED PRODUCTS LIST

IV. POWER SUPPLY EQUIPMENT AND PULL BOXES

All items require a six-month evaluation period.

MAIN SERVICE DISCONNECT ENCLOSURE WITH SAFETY SWITCH (NEMA 4)

MODEL

General Electric (GE).....	TE 100 CS
Square D.....	FA-100-DS Series E2
Westinghouse	WFDN 100

PREFORMED PULL BOX-CLASS 1

MODEL

Straight

Armorcast Products Company.....	A6001640TAPCX22 (Box & Lid)
Associated Plastics/New Basis.....	PC1730DP Series
Associated Plastics/New Basis.....	FC1730 Series
Strongwell/Quazite.....	PG1730B532 (Box)
	PG1730H511 (Lid)
	PG1730BA Series
Synertech.....	S1730B26AA (Box)
	S1730HBB0A (Lid)

Flared

Armorcast Products Company.....	A6001640TAX24 (Box & Lid)
CDR	A12-1730 Series (Box & Lid)

PREFORMED PULL BOX-CLASS 2

MODEL

Straight

Armorcast Products Company.....	A6001974TAPCX26 (Box & Lid)
Associated Plastics/New Basis.....	FC2436 Series
Strongwell/Quazite.....	PG2436B539 (Box)
	PG2436H508 (Lid)
	PG2436BA Series
Synertech.....	S2436B26AA (Box)
	S2436HCB0A (Lid)

Flared

Armorcast Products Company.....	A6001974TAX26 (Box & Lid)
CDR	A12-2436 Series (Box & Lid)

PREFORMED PULL BOX-CLASS 3

MODEL

Straight

Armorcast Products Company.....	A6001430TAPX36 (Box & Lid)
Associated Plastics/New Basis.....	FC3048 Series
Strongwell/Quazite.....	PG3048B560 (Box)
	PG3048H517 (Lid)
	PG3048BA Series
Synertech.....	S3048B36AA (Box)
	S3048HCB0A (Lid)

Flared

Armorcast Products Company.....	A6001550TAX36 (Box & Lid)
CDR	A12-3048 Series (Box & Lid)

**MISSOURI DEPARTMENT OF TRANSPORTATION
APPROVED PRODUCTS LIST**

PREFORMED PULL BOX-CLASS 5

MODEL

Flared

Armorcast Products Company	A6000177TAPCX48 (Box)
Armorcast Products Company	A6000178TAPCX48 (Box)
CDR	SA12-3200-36 (Box & Lid)